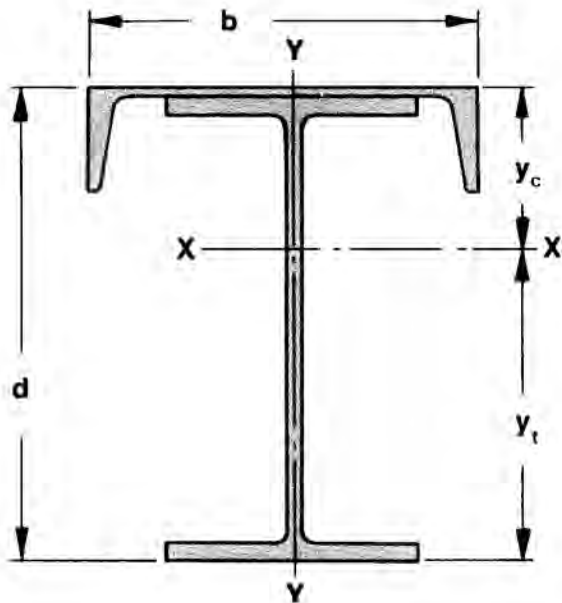


# W Shapes with Capping Channel

Beam Loading



| W Shape | Channel | Span in feet    |                 |                 |                 |                 |                 |                 |                 |
|---------|---------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|         |         | 10              | 12              | 14              | 16              | 18              | 20              | 22              | 24              |
| 8x18    | 10x15.3 | 9700<br>↑<br>D  | 8022<br>↑<br>D  | 5895<br>↑<br>D  | 4403<br>↑<br>D  | 3368<br>↑<br>D  | -               | -               | -               |
| 8x24    | 10x15.3 | 12972<br>↑<br>D | 10142<br>↑<br>D | 7324<br>↑<br>D  | 5478<br>↑<br>D  | 4196<br>↑<br>D  | -               | -               | -               |
| 8x31    | 10x15.3 | 16885<br>↑<br>D | 12809<br>↑<br>D | 9261<br>↑<br>D  | 6937<br>↑<br>D  | 5326<br>↑<br>D  | -               | -               | -               |
| 10x22   | 10x15.3 | 14777<br>↑<br>D | 12246<br>↑<br>D | 10427<br>↑<br>D | 8360<br>↑<br>D  | 6480<br>↑<br>D  | 5123<br>↑<br>D  | 4106<br>↑<br>D  | -               |
| 10x22   | 12x20.7 | 14991<br>↑<br>D | 12414<br>↑<br>D | 10561<br>↑<br>D | 8877<br>↑<br>D  | 6871<br>↑<br>D  | 5421<br>↑<br>D  | 4334<br>↑<br>D  | -               |
| 10x33   | 10x15.3 | 21586<br>↑<br>D | 17900<br>↑<br>D | 14493<br>↑<br>D | 10936<br>↑<br>D | 8479<br>↑<br>D  | 6705<br>↑<br>D  | 5376<br>↑<br>D  | -               |
| 10x33   | 12x20.7 | 21834<br>↑<br>D | 18097<br>↑<br>D | 15359<br>↑<br>D | 11582<br>↑<br>D | 8971<br>↑<br>D  | 7085<br>↑<br>D  | 5671<br>↑<br>D  | -               |
| 12x26   | 10x15.3 | 21099<br>↑<br>D | 17506<br>↑<br>D | 14929<br>↑<br>D | 12365<br>↑<br>D | 11071<br>↑<br>D | 8827<br>↑<br>D  | 7154<br>↑<br>D  | 5869<br>↑<br>D  |
| 12x26   | 12x20.7 | 21359<br>↑<br>D | 17714<br>↑<br>D | 15096<br>↑<br>D | 13122<br>↑<br>D | 11575<br>↑<br>D | 9357<br>↑<br>D  | 7573<br>↑<br>D  | 6203<br>↑<br>D  |
| 12x40   | 10x15.3 | 32027<br>↑<br>D | 26588<br>↑<br>D | 22687<br>↑<br>D | 19652<br>↑<br>D | 15342<br>↑<br>D | 12240<br>↑<br>D | 9926<br>↑<br>D  | 8150<br>↑<br>D  |
| 12x40   | 12x20.7 | 32364<br>↑<br>D | 26859<br>↑<br>D | 22909<br>↑<br>D | 19931<br>↑<br>D | 16223<br>↑<br>D | 12935<br>↑<br>D | 10483<br>↑<br>D | 8599<br>↑<br>D  |
| 14x30   | 10x15.3 | 26804<br>↑<br>D | 22253<br>↑<br>D | 18990<br>↑<br>D | 16531<br>↑<br>D | 14609<br>↑<br>D | 12575<br>↑<br>D | 10238<br>↑<br>D | 8447<br>↑<br>D  |
| 14x30   | 12x20.7 | 27170<br>↑<br>D | 22549<br>↑<br>D | 19233<br>↑<br>D | 16734<br>↑<br>D | 14779<br>↑<br>D | 13205<br>↑<br>D | 10871<br>↑<br>D | 8960<br>↑<br>D  |
| 14x30   | 15x33.9 | 27890<br>↑<br>D | 23124<br>↑<br>D | 19702<br>↑<br>D | 17120<br>↑<br>D | 15097<br>↑<br>D | 13466<br>↑<br>D | 12024<br>↑<br>D | 9883<br>↑<br>D  |
| 14x43   | 12x20.7 | 39189<br>↑<br>D | 32540<br>↑<br>D | 27774<br>↑<br>D | 24182<br>↑<br>D | 21375<br>↑<br>D | 17996<br>↑<br>D | 14655<br>↑<br>D | 12095<br>↑<br>D |
| 14x43   | 15x33.9 | 40061<br>↑<br>D | 33243<br>↑<br>D | 28352<br>↑<br>D | 24663<br>↑<br>D | 21778<br>↑<br>D | 19454<br>↑<br>D | 16186<br>↑<br>D | 13336<br>↑<br>D |
| 14x61   | 15x33.9 | 57827<br>↑<br>D | 48015<br>↑<br>D | 40980<br>↑<br>D | 35680<br>↑<br>D | 31536<br>↑<br>D | 27696<br>↑<br>D | 22565<br>↑<br>D | 18633<br>↑<br>D |
| 14x82   | 15x33.9 | 77315<br>↑<br>D | 64217<br>↑<br>D | 54827<br>↑<br>D | 47757<br>↑<br>D | 42231<br>↑<br>D | 36492<br>↑<br>D | 29762<br>↑<br>D | 24609<br>↑<br>D |
| 15x36   | 10x15.3 | 36042<br>↑<br>D | 29941<br>↑<br>D | 25568<br>↑<br>D | 22276<br>↑<br>D | 19704<br>↑<br>D | 17636<br>↑<br>D | 15565<br>↑<br>D | 12902<br>↑<br>D |
| 15x36   | 12x20.7 | 36560<br>↑<br>D | 30363<br>↑<br>D | 25920<br>↑<br>D | 22574<br>↑<br>D | 19959<br>↑<br>D | 17855<br>↑<br>D | 16123<br>↑<br>D | 13709<br>↑<br>D |
| 15x36   | 15x33.9 | 37545<br>↑<br>D | 31159<br>↑<br>D | 26578<br>↑<br>D | 23125<br>↑<br>D | 20423<br>↑<br>D | 18248<br>↑<br>D | 16456<br>↑<br>D | 14950<br>↑<br>D |
| 15x57   | 12x20.7 | 58541<br>↑<br>D | 48642<br>↑<br>D | 41549<br>↑<br>D | 36209<br>↑<br>D | 32039<br>↑<br>D | 28688<br>↑<br>D | 25655<br>↑<br>D | 21290<br>↑<br>D |
| 15x57   | 15x33.9 | 60123<br>↑<br>D | 49936<br>↑<br>D | 42634<br>↑<br>D | 37134<br>↑<br>D | 32836<br>↑<br>D | 29380<br>↑<br>D | 26535<br>↑<br>D | 23601<br>↑<br>D |
| 15x89   | 15x33.9 | 97488<br>↑<br>D | 81015<br>↑<br>D | 69213<br>↑<br>D | 60331<br>↑<br>D | 53395<br>↑<br>D | 47822<br>↑<br>D | 43240<br>↑<br>D | 36574<br>↑<br>D |
| 18x46   | 10x15.3 | 50334<br>↑<br>D | 41833<br>↑<br>D | 35743<br>↑<br>D | 31160<br>↑<br>D | 27582<br>↑<br>D | 24707<br>↑<br>D | 22344<br>↑<br>D | 20055<br>↑<br>D |
| 18x46   | 12x20.7 | 51135<br>↑<br>D | 42490<br>↑<br>D | 36296<br>↑<br>D | 31634<br>↑<br>D | 27993<br>↑<br>D | 25067<br>↑<br>D | 22661<br>↑<br>D | 20644<br>↑<br>D |
| 18x46   | 15x33.9 | 52641<br>↑<br>D | 43721<br>↑<br>D | 37326<br>↑<br>D | 32511<br>↑<br>D | 28748<br>↑<br>D | 25721<br>↑<br>D | 23230<br>↑<br>D | 21141<br>↑<br>D |
| 18x65   | 12x20.7 | 73753<br>↑<br>D | 61303<br>↑<br>D | 52387<br>↑<br>D | 45678<br>↑<br>D | 40440<br>↑<br>D | 36233<br>↑<br>D | 32776<br>↑<br>D | 29737<br>↑<br>D |
| 18x65   | 15x33.9 | 75734<br>↑<br>D | 62930<br>↑<br>D | 53756<br>↑<br>D | 46851<br>↑<br>D | 41459<br>↑<br>D | 37125<br>↑<br>D | 33561<br>↑<br>D | 30575<br>↑<br>D |
| 18x97   | 15x33.9 | -               | 97968<br>↑<br>D | 83730<br>↑<br>D | 73018<br>↑<br>D | 64658<br>↑<br>D | 57943<br>↑<br>D | 52426<br>↑<br>D | 47806<br>↑<br>D |
| 21x57   | 12x20.7 | 71880<br>↑<br>D | 59758<br>↑<br>D | 51077<br>↑<br>D | 44546<br>↑<br>D | 39450<br>↑<br>D | 35357<br>↑<br>D | 31995<br>↑<br>D | 29179<br>↑<br>D |
| 21x57   | 15x33.9 | 74102<br>↑<br>D | 61585<br>↑<br>D | 52618<br>↑<br>D | 45870<br>↑<br>D | 40602<br>↑<br>D | 36369<br>↑<br>D | 32889<br>↑<br>D | 29974<br>↑<br>D |
| 21x83   | 12x20.7 | -               | 89289<br>↑<br>D | 76340<br>↑<br>D | 66603<br>↑<br>D | 59007<br>↑<br>D | 52909<br>↑<br>D | 47901<br>↑<br>D | 43711<br>↑<br>D |
| 21x83   | 15x33.9 | -               | 91653<br>↑<br>D | 78343<br>↑<br>D | 68331<br>↑<br>D | 60518<br>↑<br>D | 54244<br>↑<br>D | 49089<br>↑<br>D | 44774<br>↑<br>D |
| 21x111  | 18x42.7 | -               | -               | -               | 97088<br>↑<br>D | 86010<br>↑<br>D | 77117<br>↑<br>D | 69813<br>↑<br>D | 63700<br>↑<br>D |
| 24x68   | 12x20.7 | 98345<br>↑<br>D | 81792<br>↑<br>D | 69943<br>↑<br>D | 61033<br>↑<br>D | 54084<br>↑<br>D | 48507<br>↑<br>D | 43928<br>↑<br>D | 40097<br>↑<br>D |
| 24x68   | 15x33.9 | -               | 84113<br>↑<br>D | 71907<br>↑<br>D | 62728<br>↑<br>D | 55586<br>↑<br>D | 49815<br>↑<br>D | 45092<br>↑<br>D | 41139<br>↑<br>D |
| 24x68   | 18x42.7 | -               | 85184<br>↑<br>D | 72810<br>↑<br>D | 63501<br>↑<br>D | 56236<br>↑<br>D | 50402<br>↑<br>D | 45609<br>↑<br>D | 41596<br>↑<br>D |
| 24x76   | 15x33.9 | -               | 94814<br>↑<br>D | 81065<br>↑<br>D | 70726<br>↑<br>D | 62660<br>↑<br>D | 56185<br>↑<br>D | 50867<br>↑<br>D | 46418<br>↑<br>D |
| 24x104  | 15x33.9 | -               | -               | -               | -               | 89085<br>↑<br>D | 79915<br>↑<br>D | 72386<br>↑<br>D | 66090<br>↑<br>D |
| 24x104  | 18x42.7 | -               | -               | -               | -               | 89928<br>↑<br>D | 80657<br>↑<br>D | 73044<br>↑<br>D | 66676<br>↑<br>D |
| 27x84   | 15x33.9 | -               | -               | 98658<br>↑<br>D | 86104<br>↑<br>D | 76314<br>↑<br>D | 68459<br>↑<br>D | 62010<br>↑<br>D | 56617<br>↑<br>D |
| 27x84   | 18x42.7 | -               | -               | 99920<br>↑<br>D | 87192<br>↑<br>D | 77265<br>↑<br>D | 69298<br>↑<br>D | 62756<br>↑<br>D | 57283<br>↑<br>D |
| 27x94   | 15x33.9 | -               | -               | -               | 97155<br>↑<br>D | 86118<br>↑<br>D | 77263<br>↑<br>D | 69995<br>↑<br>D | 63917<br>↑<br>D |
| 30x99   | 15x33.9 | -               | -               | -               | -               | 96443<br>↑<br>D | 86546<br>↑<br>D | 78425<br>↑<br>D | 71635<br>↑<br>D |
| 30x99   | 18x42.7 | -               | -               | -               | -               | 97759<br>↑<br>D | 87714<br>↑<br>D | 79489<br>↑<br>D | 72575<br>↑<br>D |
| 30x108  | 15x33.9 | -               | -               | -               | -               | -               | 95525<br>↑<br>D | 86570<br>↑<br>D | 79084<br>↑<br>D |
| 33x118  | 15x33.9 | -               | -               | -               | -               | -               | -               | -               | 94682<br>↑<br>D |
| 33x118  | 18x42.7 | -               | -               | -               | -               | -               | -               | -               | 95889<br>↑<br>D |
| 36x135  | 15x33.9 | -               | -               | -               | -               | -               | -               | -               | -               |
| 36x135  | 18x42.7 | -               | -               | -               | -               | -               | -               | -               | -               |

NOTE: For underhung cranes operating on the lower flanges of the runway beam, check lower flange loading limits

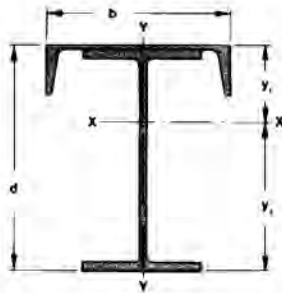
All loading figures shown are in pounds.

| Span in feet |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
|--------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 26           | 28         | 30         | 32         | 34         | 36         | 38         | 40         | 42         | 44         | 46         | 48         | 50         | 52         | 54         | 56         | 58         | 60         |
| -            | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| -            | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| -            | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| -            | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| -            | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| -            | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| -            | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 4858<br>D    | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 5123<br>D    | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 6753<br>D    | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 7116<br>D    | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 7040<br>D    | 5912<br>D  | 4991<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 7458<br>D    | 6254<br>D  | 5270<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 8200<br>D    | 6847<br>D  | 5740<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 10084<br>D   | 8473<br>D  | 7158<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 11096<br>D   | 9300<br>D  | 7831<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 15548<br>D   | 13075<br>D | 11057<br>D | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 20567<br>D   | 17329<br>D | 14689<br>D | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 10816<br>D   | 9147<br>D  | 7788<br>D  | 6664<br>D  | 5722<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 11484<br>D   | 9704<br>D  | 8255<br>D  | 7055<br>D  | 6049<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 12714<br>D   | 10719<br>D | 9092<br>D  | 7745<br>D  | 6614<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 17871<br>D   | 15138<br>D | 12914<br>D | 11077<br>D | 9537<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 19795<br>D   | 16751<br>D | 14273<br>D | 12225<br>D | 10507<br>D | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 30738<br>D   | 26075<br>D | 22283<br>D | 19152<br>D | 16531<br>D | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 16875<br>D   | 14337<br>D | 12274<br>D | 10572<br>D | 9148<br>D  | 7942<br>D  | 6910<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 17930<br>D   | 15227<br>D | 13031<br>D | 11218<br>D | 9701<br>D  | 8417<br>D  | 7317<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 19361<br>D   | 16927<br>D | 14465<br>D | 12432<br>D | 10730<br>D | 9288<br>D  | 8052<br>D  | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 25041<br>D   | 21292<br>D | 18247<br>D | 15736<br>D | 13636<br>D | 11859<br>D | 10339<br>D | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 27705<br>D   | 23544<br>D | 20162<br>D | 17372<br>D | 15039<br>D | 13064<br>D | 11373<br>D | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 41254<br>D   | 35114<br>D | 30129<br>D | 26020<br>D | 22586<br>D | 19682<br>D | 17199<br>D | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          | -          |
| 26785<br>D   | 24659<br>D | 21209<br>D | 18367<br>D | 15995<br>D | 13992<br>D | 12281<br>D | 10807<br>D | 9524<br>D  | 8400<br>D  | -          | -          | -          | -          | -          | -          | -          | -          |
| 27494<br>D   | 25355<br>D | 23488<br>D | 20420<br>D | 17767<br>D | 15525<br>D | 13611<br>D | 11960<br>D | 10523<br>D | 9262<br>D  | -          | -          | -          | -          | -          | -          | -          | -          |
| 40149<br>D   | 35695<br>D | 30731<br>D | 26645<br>D | 23236<br>D | 20358<br>D | 17903<br>D | 15787<br>D | 13949<br>D | 12338<br>D | -          | -          | -          | -          | -          | -          | -          | -          |
| 41105<br>D   | 37944<br>D | 33838<br>D | 29329<br>D | 25567<br>D | 22390<br>D | 19680<br>D | 17344<br>D | 15314<br>D | 13534<br>D | -          | -          | -          | -          | -          | -          | -          | -          |
| 58505<br>D   | 54029<br>D | 47925<br>D | 41580<br>D | 36289<br>D | 31824<br>D | 28015<br>D | 24736<br>D | 21887<br>D | 19392<br>D | -          | -          | -          | -          | -          | -          | -          | -          |
| 36842<br>D   | 34040<br>D | 31599<br>D | 28119<br>D | 24595<br>D | 21623<br>D | 19092<br>D | 16914<br>D | 15024<br>D | 13372<br>D | 11916<br>D | 10625<br>D | 9472<br>D  | -          | -          | -          | -          | -          |
| 37779<br>D   | 34884<br>D | 32361<br>D | 30141<br>D | 27226<br>D | 23923<br>D | 21109<br>D | 18688<br>D | 16586<br>D | 14747<br>D | 13127<br>D | 11689<br>D | 10406<br>D | -          | -          | -          | -          | -          |
| 38183<br>D   | 35242<br>D | 32679<br>D | 30422<br>D | 28417<br>D | 25098<br>D | 22132<br>D | 19579<br>D | 17363<br>D | 15424<br>D | 13714<br>D | 12197<br>D | 10842<br>D | -          | -          | -          | -          | -          |
| 42636<br>D   | 39378<br>D | 36541<br>D | 34044<br>D | 30476<br>D | 26794<br>D | 23657<br>D | 20959<br>D | 18617<br>D | 16570<br>D | 14766<br>D | 13166<br>D | 11737<br>D | -          | -          | -          | -          | -          |
| 60741<br>D   | 56136<br>D | 52127<br>D | 47665<br>D | 41735<br>D | 36738<br>D | 32482<br>D | 28823<br>D | 25651<br>D | 22878<br>D | 20437<br>D | 18273<br>D | 16344<br>D | -          | -          | -          | -          | -          |
| 61265<br>D   | 56606<br>D | 52548<br>D | 48980<br>D | 43596<br>D | 38367<br>D | 33913<br>D | 30083<br>D | 26762<br>D | 23859<br>D | 21303<br>D | 19037<br>D | 17016<br>D | -          | -          | -          | -          | -          |
| 52035<br>D   | 48091<br>D | 44657<br>D | 41637<br>D | 38959<br>D | 36477<br>D | 32319<br>D | 28748<br>D | 25654<br>D | 22952<br>D | 20577<br>D | 18474<br>D | 16600<br>D | 14923<br>D | 13412<br>D | 12044<br>D | -          | -          |
| 52633<br>D   | 48629<br>D | 45143<br>D | 42076<br>D | 39355<br>D | 36922<br>D | 33910<br>D | 30152<br>D | 26896<br>D | 24052<br>D | 21551<br>D | 19337<br>D | 17365<br>D | 15598<br>D | 14006<br>D | 12565<br>D | -          | -          |
| 58754<br>D   | 54311<br>D | 50433<br>D | 47043<br>D | 44027<br>D | 40857<br>D | 36215<br>D | 32228<br>D | 28774<br>D | 25760<br>D | 23109<br>D | 20764<br>D | 18675<br>D | 16805<br>D | 15121<br>D | 13597<br>D | -          | -          |
| 65869<br>D   | 60907<br>D | 56590<br>D | 52796<br>D | 49432<br>D | 46427<br>D | 43725<br>D | 40039<br>D | 35841<br>D | 32181<br>D | 28966<br>D | 26125<br>D | 23598<br>D | 21338<br>D | 19307<br>D | 17471<br>D | 15806<br>D | 14288<br>D |
| 66720<br>D   | 61681<br>D | 57295<br>D | 53439<br>D | 50021<br>D | 46966<br>D | 44218<br>D | 41731<br>D | 37612<br>D | 33763<br>D | 30382<br>D | 27393<br>D | 24735<br>D | 22358<br>D | 20221<br>D | 18289<br>D | 16536<br>D | 14939<br>D |
| 72728<br>D   | 67259<br>D | 62501<br>D | 58320<br>D | 54613<br>D | 51303<br>D | 48327<br>D | 43980<br>D | 39384<br>D | 35377<br>D | 31858<br>D | 28748<br>D | 25983<br>D | 23511<br>D | 21289<br>D | 19282<br>D | 17461<br>D | 15802<br>D |
| 87107<br>D   | 80592<br>D | 74926<br>D | 69948<br>D | 65539<br>D | 61602<br>D | 58064<br>D | 54865<br>D | 51956<br>D | 46878<br>D | 42345<br>D | 38344<br>D | 34790<br>D | 31618<br>D | 28770<br>D | 26202<br>D | 23876<br>D | 21760<br>D |
| 88204<br>D   | 81594<br>D | 75844<br>D | 70792<br>D | 66316<br>D | 62319<br>D | 58726<br>D | 55476<br>D | 52521<br>D | 49103<br>D | 44349<br>D | 40153<br>D | 36426<br>D | 33098<br>D | 30111<br>D | 27417<br>D | 24977<br>D | 22757<br>D |
| -            | 98291<br>D | 91412<br>D | 85372<br>D | 80022<br>D | 75248<br>D | 70958<br>D | 67081<br>D | 63557<br>D | 60338<br>D | 55239<br>D | 50246<br>D | 45820<br>D | 41780<br>D | 38132<br>D | 34846<br>D | 31872<br>D | 29170<br>D |
| -            | 99551<br>D | 92571<br>D | 86441<br>D | 81011<br>D | 76165<br>D | 71810<br>D | 67873<br>D | 64294<br>D | 61024<br>D | 58023<br>D | 52737<br>D | 47962<br>D | 43703<br>D | 39883<br>D | 36442<br>D | 33329<br>D | 30499<br>D |

Limits T = Tension C = Compression D = Vertical Defl. L = Lateral Defl.

# AMERICAN STANDARD SHAPES

## (W SHAPE W/ CAPPING CHANNEL)



| W Shape | Channel | Total Weight per Foot lb | Total Area in <sup>2</sup> | Width b in | Depth d in | Yc in  | Yt in  | Elastic Properties |                                      |                                      |                   |
|---------|---------|--------------------------|----------------------------|------------|------------|--------|--------|--------------------|--------------------------------------|--------------------------------------|-------------------|
|         |         |                          |                            |            |            |        |        | Axis X-X           |                                      | Axis Y-Y                             |                   |
|         |         |                          |                            |            |            |        |        | I in <sup>4</sup>  | S <sub>c</sub> Upper in <sup>3</sup> | S <sub>c</sub> Lower in <sup>3</sup> | S in <sup>3</sup> |
| 8x18    | 10x15.3 | 33.3                     | 9.75                       | 10.0       | 8.380      | 2.617  | 5.763  | 96.91              | 37.03                                | 16.82                                | 75.37             |
| 8x24    | 10x15.3 | 39.3                     | 11.57                      | 10.0       | 8.170      | 2.819  | 5.351  | 120.1              | 42.61                                | 22.45                                | 85.7              |
| 8x31    | 10x15.3 | 46.3                     | 13.62                      | 10.0       | 8.240      | 3.051  | 5.189  | 151.4              | 49.63                                | 29.18                                | 104.5             |
| 10x22   | 10x15.3 | 37.3                     | 10.98                      | 10.0       | 10.410     | 3.407  | 7.003  | 178.7              | 52.44                                | 25.51                                | 78.8              |
| 10x22   | 12x20.7 | 42.7                     | 12.58                      | 12.0       | 10.452     | 3.107  | 7.345  | 190.4              | 61.27                                | 25.92                                | 140.4             |
| 10x33   | 10x15.3 | 48.3                     | 14.20                      | 10.0       | 9.970      | 3.691  | 6.279  | 233.6              | 63.30                                | 37.21                                | 104.0             |
| 10x33   | 12x20.7 | 53.7                     | 15.80                      | 12.0       | 10.012     | 3.432  | 6.580  | 247.9              | 72.25                                | 37.68                                | 165.6             |
| 12x26   | 10x15.3 | 41.3                     | 12.14                      | 10.0       | 12.460     | 4.236  | 8.224  | 298.7              | 70.52                                | 36.32                                | 84.7              |
| 12x26   | 12x20.7 | 46.7                     | 13.74                      | 12.0       | 12.502     | 3.868  | 8.634  | 317.8              | 82.16                                | 36.81                                | 146.3             |
| 12x40   | 10x15.3 | 55.3                     | 16.29                      | 10.0       | 12.180     | 4.673  | 7.507  | 413.4              | 88.46                                | 55.07                                | 111.5             |
| 12x40   | 12x20.7 | 60.7                     | 17.89                      | 12.0       | 12.222     | 4.361  | 7.861  | 437.8              | 100.4                                | 55.69                                | 173.1             |
| 14x30   | 10x15.3 | 45.3                     | 13.34                      | 10.0       | 14.080     | 4.963  | 9.117  | 420.1              | 84.65                                | 46.08                                | 87.0              |
| 14x30   | 12x20.7 | 50.7                     | 14.94                      | 12.0       | 14.122     | 4.551  | 9.571  | 447.5              | 98.33                                | 46.75                                | 148.6             |
| 14x30   | 15x33.9 | 63.9                     | 18.81                      | 15.0       | 14.240     | 3.861  | 10.379 | 499.1              | 129.3                                | 48.09                                | 334.6             |
| 14x43   | 12x20.7 | 63.7                     | 18.69                      | 12.0       | 13.942     | 5.022  | 8.920  | 600.8              | 119.6                                | 67.35                                | 174.2             |
| 14x43   | 15x33.9 | 76.9                     | 22.56                      | 15.0       | 14.060     | 4.385  | 9.675  | 667.1              | 152.1                                | 68.95                                | 360.2             |
| 14x61   | 15x33.9 | 94.9                     | 27.86                      | 15.0       | 14.290     | 5.000  | 9.290  | 923.3              | 184.7                                | 99.39                                | 422.0             |
| 14x82   | 15x33.9 | 115.9                    | 34.06                      | 15.0       | 14.710     | 5.576  | 9.134  | 1213               | 217.5                                | 132.8                                | 463.0             |
| 16x36   | 10x15.3 | 51.3                     | 15.09                      | 10.0       | 16.100     | 5.928  | 10.172 | 629.4              | 106.2                                | 61.88                                | 91.9              |
| 16x36   | 12x20.7 | 56.7                     | 16.69                      | 12.0       | 16.142     | 5.470  | 10.672 | 670.3              | 122.3                                | 62.81                                | 153.5             |
| 16x36   | 15x33.9 | 69.9                     | 20.56                      | 15.0       | 16.260     | 4.676  | 11.584 | 748.3              | 160.0                                | 64.60                                | 339.5             |
| 16x57   | 12x20.7 | 77.7                     | 22.89                      | 12.0       | 16.712     | 6.422  | 10.290 | 1034               | 161.0                                | 100.5                                | 172.1             |
| 16x57   | 15x33.9 | 90.9                     | 26.76                      | 15.0       | 16.830     | 5.701  | 11.129 | 1149               | 201.6                                | 103.3                                | 358.1             |
| 16x89   | 15x33.9 | 122.9                    | 36.16                      | 15.0       | 17.150     | 6.575  | 10.575 | 1769               | 269.0                                | 167.2                                | 478.0             |
| 18x46   | 10x15.3 | 61.3                     | 17.99                      | 10.0       | 18.300     | 7.115  | 11.185 | 965.6              | 135.7                                | 86.33                                | 89.9              |
| 18x46   | 12x20.7 | 66.7                     | 19.59                      | 12.0       | 18.342     | 6.634  | 11.708 | 1027               | 154.8                                | 87.74                                | 151.5             |
| 18x46   | 15x33.9 | 79.9                     | 23.46                      | 15.0       | 18.460     | 5.761  | 12.699 | 1148               | 199.3                                | 90.42                                | 337.5             |
| 18x65   | 12x20.7 | 85.7                     | 25.19                      | 12.0       | 18.632     | 7.339  | 11.293 | 1428               | 194.6                                | 126.5                                | 183.8             |
| 18x65   | 15x33.9 | 98.9                     | 29.06                      | 15.0       | 18.750     | 6.563  | 12.187 | 1584               | 241.3                                | 130.0                                | 369.8             |
| 18x97   | 15x33.9 | 130.9                    | 38.46                      | 15.0       | 18.990     | 7.388  | 11.602 | 2344               | 317.2                                | 202.0                                | 516.0             |
| 21x57   | 12x20.7 | 77.7                     | 22.79                      | 12.0       | 21.342     | 8.109  | 13.233 | 1630               | 201.1                                | 123.2                                | 159.6             |
| 21x57   | 15x33.9 | 90.9                     | 26.66                      | 15.0       | 21.460     | 7.141  | 14.319 | 1820               | 254.9                                | 127.1                                | 345.6             |
| 21x83   | 12x20.7 | 103.7                    | 30.39                      | 12.0       | 21.712     | 8.933  | 12.779 | 2350               | 263.1                                | 183.9                                | 210.4             |
| 21x83   | 15x33.9 | 116.9                    | 34.26                      | 15.0       | 21.830     | 8.112  | 13.718 | 2592               | 319.5                                | 188.9                                | 396.4             |
| 21x111  | 18x42.7 | 153.7                    | 45.30                      | 18.0       | 21.960     | 8.332  | 13.628 | 3655               | 438.6                                | 268.2                                | 828.0             |
| 24x68   | 12x20.7 | 88.7                     | 26.19                      | 12.0       | 24.012     | 9.485  | 14.527 | 2447               | 257.9                                | 168.4                                | 199.4             |
| 24x68   | 15x33.9 | 101.9                    | 30.06                      | 15.0       | 24.13      | 8.462  | 15.668 | 2716               | 320.9                                | 173.3                                | 385.4             |
| 24x68   | 18x42.7 | 110.7                    | 32.70                      | 18.0       | 24.18      | 7.908  | 16.272 | 2858               | 361.4                                | 175.6                                | 624.4             |
| 24x76   | 15x33.9 | 109.9                    | 32.36                      | 15.0       | 24.32      | 8.798  | 15.522 | 3032               | 344.6                                | 195.3                                | 397.5             |
| 24x104  | 15x33.9 | 137.9                    | 40.56                      | 15.0       | 24.46      | 9.571  | 14.889 | 4127               | 431.2                                | 277.2                                | 574               |
| 24x104  | 18x42.7 | 146.7                    | 43.20                      | 18.0       | 24.51      | 9.096  | 15.414 | 4316               | 474.5                                | 280.0                                | 813               |
| 27x84   | 15x33.9 | 117.9                    | 34.76                      | 15.0       | 27.11      | 10.039 | 17.071 | 4053               | 403.7                                | 237.4                                | 421               |
| 27x84   | 18x42.7 | 126.7                    | 37.40                      | 18.0       | 27.16      | 9.450  | 17.710 | 4261               | 450.9                                | 240.6                                | 660               |
| 27x94   | 15x33.9 | 127.9                    | 37.66                      | 15.0       | 27.32      | 10.403 | 16.917 | 4530               | 435.5                                | 267.8                                | 439               |
| 30x99   | 15x33.9 | 132.9                    | 39.06                      | 15.0       | 30.05      | 11.543 | 18.507 | 5545               | 480.4                                | 299.6                                | 443               |
| 30x99   | 18x42.7 | 141.7                    | 41.70                      | 18.0       | 30.10      | 10.925 | 19.175 | 5827               | 533.4                                | 303.9                                | 662               |
| 30x108  | 15x33.9 | 141.9                    | 41.66                      | 15.0       | 30.23      | 11.842 | 18.388 | 6078               | 513.2                                | 330.5                                | 461               |
| 33x118  | 15x33.9 | 151.9                    | 44.66                      | 15.0       | 33.26      | 13.252 | 20.008 | 7900               | 596.1                                | 394.8                                | 502               |
| 33x118  | 18x42.7 | 160.7                    | 47.30                      | 18.0       | 33.31      | 12.617 | 20.693 | 8282               | 656.4                                | 400.2                                | 741               |
| 36x135  | 15x33.9 | 168.9                    | 49.66                      | 15.0       | 35.95      | 14.688 | 21.262 | 10215              | 695.5                                | 480.5                                | 540               |
| 36x135  | 18x42.7 | 177.7                    | 52.30                      | 18.0       | 36.00      | 14.046 | 21.954 | 10693              | 761.3                                | 487.1                                | 779               |